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REGIONAL INFORMATION SYSTEM FOR EPIDEMIOLOGICAL SURVEILLANCE OF FOOD BORNE DISEASE (SIRVE-ETA) PERIOD 1993 - 1994





PAN AMERICAN HEALTH ORGANIZATION Pan American Sanitary Bureau, Regional Office of the WORLD HEALTH ORGANIZATION

REGIONAL INFORMATION SYSTEM FOR EPIDEMIOLOGICAL SURVEILLANCE OF FOOD BORNE DISEASE (SIRVE-ETA)
PERIOD 1993 - 1994

REGIONAL INFORMATION SYSTEM FOR EPIDEMIOLOGICAL SURVEILLANCE OF FOOD BORNE DISEASE (SIRVE-ETA)¹

BACKGROUND

Pursuant to the requirements of the VII Inter-American Ministerial Meeting on Animal Health (RIMSA) and the XXXV Meeting of the Board of Directors of PAHO (Pan American Health Organization), the Veterinary Public Health Program (HCV) developed the Regional Plan of Action for the Technical Cooperation on Food Protection for the 1991-1995 period (Doc. HPV/FOS-001/92), placing special emphasis for the establishment of national systems for epidemiological surveillance of food borne disease (VE-ETA).

The Agreement entered into by the Pan American Sanitary Bureau, administrative organ of the Pan American Health Organization (PAHO)/ Regional Office of the World Health Organization, and the Government of the Argentine Republic led to the establishment of the Pan American Institute for Food Protection and Zoonosis (INNPAZ), initiating its activities on January 2, 1992.

Article 3 of this Agreement, captioned "Functions of the Institute", establishes that INNPAZ will carry out the functions listed in the following paragraph, among others, for the benefit of the Organization's member countries.

"Epidemiological surveillance and information: To serve as a center for collecting and processing regional data for the epidemiological surveillance of Food Borne Disease and zoonosis, pursuant to the requirements called for by the Organization's administrative entities."

DEVELOPMENT OF THE SYSTEM

The purpose of establishing a permanent inflow of regional epidemiological information regarding Food Borne Disease (FBD) is to obtain knowledge of their occurrence in each country so as to measure the effectiveness of the national food protection programs and promote actions to prevent and control such diseases.

Pan American Institute for Food Protection and Zoonoses (INPPAZ) PAHO/WHO

The lack of an epidemiological surveillance systems of FBD do not allow to have the necessary information to assess their scope and their consequences for human health. It also limits the possibilities to assign them high priority to approach them as a problem, thus signalling the absence of a firm viewpoint in this respect and a lack of political, technical and administrative initiative to control them.

In view of the weaknesses mentioned above, different strategies were defined, which led to the programming of activities which, to date, have achieved the goals that are summarized below in chronological order.

- In 1993, the "GUIAVETA", (Guidelines for the Establishment of System for the Epidemiological Surveillance of Food Borne Disease and the investigation of Outbreaks of Food Poisoning) was published and distributed. (Document HPV/FOS/103/93).
- During 1993 and 1994 courses on "Epidemiological Surveillance of Food Borne Disease" were conducted, attended by representatives from Argentina, Brazil, Chile, Colombia, Nicaragua, Paraguay and Uruguay.
- In March 1994 a document called "Guidelines for the Implementation of the Regional Information System for the Surveillance of Food Borne Diseases in the Americas" was distributed. This document established the responsibilities of the National Units, the need to appoint an officer for the Epidemiological Surveillance System of Food Borne Disease to act as a focal point to link the Pan American Health Organization and the national authorities.
- To date, the following 15 countries have appointed focal points: Argentina, Bolivia, Colombia, Costa Rica, Chile, Cuba, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Uruguay and Venezuela. (Annex No. 1).

The information and data originated in the countries must be recorded in the form provided as Annex No. 2, with the aid of the attached instructions, and published on a quarterly basis. This information must comply with the previously established communication flow, according to the Flow Chart included as Figure No. 1.

REPORT FROM THE SIRVE-ETA FOCAL POINTS TO INPPAZ

The information received to date from the agencies varies from one place to another, a fact which is attributable to the different interpretations of the instructions for

completing the quarterly report form, as well as the incomplete generation of information at local level in the different countries.

There are cases in which epidemiological information regarding FBD was received directly from the local levels. In other cases, the information received from the central levels did not comply with the specified form.

It is expected a more active and widespread participation from the countries before entering the process of unification and standardization of the information in order to conduct a comparative analysis of the data filed. The following comments are drawn from the information received:

ARGENTINA has supplied the general information available in the National Epidemiological Surveillance System (SINAVE).

The reports of diarrhea are of: 338,506 cases in children under 5 years of age and 178,715 in persons over 5 years old and it is possible that many of these cases were caused by food. It is worth highlighting that in 1994 there were reported 989 cases of cholera and 253 cases of typhoid fever.

More specific information points out 3,355 cases of food poisoning without providing details on the causes, in view of which it would be necessary to break down the information to analyze it accordingly.

Besides the cases of food poisoning, 1,021 cases of trichinosis - with details of the regional incidence per country - and ten cases of botulism were reported separately. However, neither of the latter included information regarding the number of outbreaks, the food involved, the location where they occurred or the type of diagnosis used for confirmation.

There were 439 reported cases of brucellosis, however without specifying whether the origin was related to occupation or food.

There were 28,342 reported cases of type "A" hepatitis of hydric origin, suggesting the existence of an epidemic.

BOLIVIA reported that activities for the control of FBD would start during 1995 at the Santa Cruz Regional Secretariat, where the staff has already been trained in Epidemiological Surveillance of FBD.

CHILE possesses a central and departmental structure for recording outbreaks of food poisoning and has requested direct technical assistance to modernize the system in order to join the SIRVE-ETA in the near future.

COLOMBIA reported 9 outbreaks of FBD involving 405 people during the July-September quarter, without any reported deaths.

<u>Salmonella</u> sp. and <u>Salmonella enteritidis</u> accounted for 55.5% of the outbreaks, which affected 212 people, that is to say 52% on the total number. The foods and the places or origin of the outbreaks differ and the incidence does not follow any given pattern.

COSTA RICA supplied information for the first and second quarters of 1994, reporting 141 isolated cases and 21 outbreaks affecting 70 people. The cause was only identified in three of the cases and these were cheese, rice and chicken. Sausages were identified as a related cause. The etiology was not identified in many of the cases, and in all of them it was reported that the ailment was "food poisoning".

ECUADOR reported that it began implementation of the VE-ETA system last December in the Province of Esmeraldas, and later extended it to the Provinces of Guayas and Pichincha; the generated data will be transferred to SIRVE-ETA.

EL SALVADOR has provided information for the July-September 1994 quarter, reporting 5 outbreaks of Food Borne Disease involving 7,489 subjects and 2 cases of death.

Table No. 2 shows a reported outbreak of amoebiasis affecting 85.6% of the total number of subjects involved in the five outbreaks; however, no information is supplied with regard to the food that acted as a vehicle for the protozoan, the existence of laboratory confirmation of the diagnosis nor the type of establishment where the food was purchased. Given the dimension of the figures, it would appear to be an endemic process.

The three outbreaks for which the type of sales outlet is specified report that the food was purchased from street vendors.

GUATEMALA reported 146 cases of Food Borne Disease during the first three quarters of 1994, but it does not specify the number of outbreaks or the type of food or

etiology. It also reported 3 isolated cases of gastroenteritis caused by \underline{E} . \underline{coli} and \underline{S} . \underline{aureus} in dairy products.

MEXICO recorded 51 outbreaks of Food Borne Disease during the first three quarters of 1994, involving 5,326 people, with 14 cases of death. Table No. 3 shows a breakdown of this information.

There were 7 outbreaks labelled as gastroenteritis (13.7%) and 23 as food poisoning (45%), which together amount to 58.8% on the total number of outbreaks and involve 4,179 subjects, representing 78.4% on the total number of cases of illness reported, for which neither the etiology nor the food with the highest attack rate in each outbreak, or any related food, were identified. This lack of information can easily be remedied, enabling the achievement of preventive actions within the system for epidemiological surveillance of Food Borne Disease.

Among the outbreaks for which the causes and the food involved were identified, it is worth highlighting 8 outbreaks caused by enterobacteria (3 by Salmonellas, 2 by Shigellas and 3 by E. coli) involving 885 people who became ill after eating contaminated shellfish, water, coffee, meat, cream or cheese.

This country has also reported 7 cases of Food Borne Disease; 6 of them were from type "A" hepatitis in which water acted as the vehicle for infection. The remaining case was diagnosed as brucellosis, which had been caused by goat milk and cheese.

URUGUAY provided information for the whole year of 1994, reporting 9 outbreaks involving 367 subjects, with no deaths.

There were five outbreaks of type "A" hepatitis, involving 329 children between the ages of 6 and 12 in all (89.6%). In the other outbreaks, which were classified as acute gastroenteritis, the number of subjects affected was small (38) but differed widely as regards the etiology and the type of food involved, sharing only one common factor, the place where the people became infected, which turned out to be their own homes. Table No. 4 summarizes the report submitted by the Uruguayan Agency.

In addition to the outbreaks, 5 isolated cases of typhoid fever were reported, but no information was provided regarding the food that caused them.

VENEZUELA reported 3 outbreaks of gastroenteritis during the third quarter of 1994, involving 25 subjects, but with no cases of death.

Table No. 5 provides a summary of the information submitted by Venezuela, showing that 2 of the outbreaks were caused by cheese contaminated by <u>S</u>. <u>aureus</u>, which the affected subjects had eaten in their homes.

SUMMARY OF THE CASES/OUTBREAKS OF FOOD BORNE DISEASE REPORTED PER COUNTRY

Table No. 6 includes the number of outbreaks reported by each country to SIRVE-ETA up to December 1994.

It is worth noting that, from the total number of 99 outbreaks involving 13,865 subjects and the 158 isolated cases reported, only 29 were confirmed by laboratory diagnosis and in 5 cases, confirmation was by clinical evidence. It is considered important to increase by confirmation diagnosis in order to improve the reliability of the data.

Table No. 7, which classifies the outbreaks reported in the Region according to the type of illness, shows that 47% of the cases were due to "food poisoning", which is the most frequent cause; however, the etiology and the related foods - two important factors for decision making and for applying control and preventive measures - remain unknown.

The same lack of information observed in the reports of food poisoning is evident in the cases of gastroenteritis.

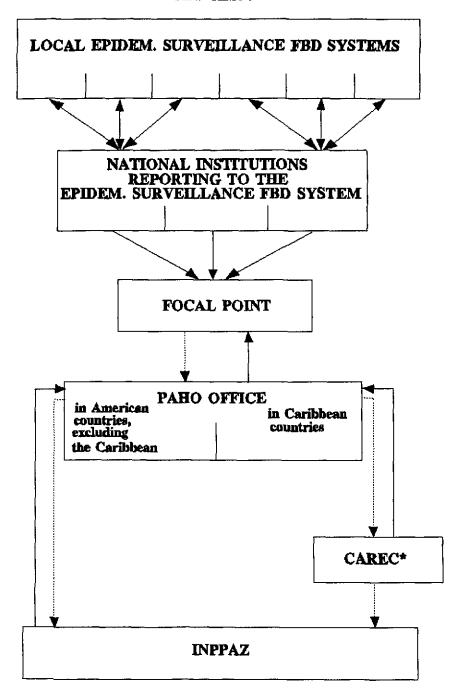
In order to carry out a better analysis of Food Borne Disease, it is necessary to break down the information so as to allow for a more adequate grouping and cross-analysis of the variables involved. To achieve this, the quality of the information must be improved, implying a process which must begin at local level, by encouraging the research of outbreaks with appropriate contributions from the clinical and dietetics laboratories for the corresponding confirmed diagnosis.

The success of epidemiological surveillance requires that each pathology's characteristics and variables be defined beforehand, in order to include them in the national VE-ETA system's documents and thus avoiding false or ambiguous reports, as occurred with the "food poisoning" cases referred to previously.

The illnesses that caused the 16 cases of death were gastroenteritis (5), chemical poisoning by vegetable toxins and metals (5), shigellosis (2), cholera (2), hepatitis (1) and salmonellosis (1). This means that 31% of the reported deaths were due to chemical poisoning and 69% were due to biological causes.

There is a lack of specific information regarding the type of outlet or place where the case or the outbreak occurred - 63% of the reports do not specify the place. The reports show that 20% of the outbreaks of infection occurred in the homes and 17% were originated at institutional dining rooms and restaurants.

Figure 1: REGIONAL INFORMATION SYSTEM FOR EPIDEMIOLOGICAL SURVEILLANCE OF FOOD BORNE DISEASE (SIRVE-ETA). Flow Chart:



^{*} CAREC : Caribbean epidemiology Center.

TABLE Nº 1

COLOMBIA. REPORTED OUTBREAKS OF FOOD BORNE DISEASE (FBD). THIRD QUARTER, 1994

				Nº SUE	SJECTS	TYPE OF OUTLET	
'	N° OUTBREAKS / DISEASE	ETIOLOGY FOOD		SICK	DEAD		AGE
5	Salmonellosis	Salmonella sp S.enteritidis	Hamburger Cake Chicken with rice Cold dish Water	110 25 12 41 24	0 0 0 0	Street, Pastry Shop, Picnic, Home Rural Area	C E EF CDE C
2	Food Poisoning	B. cereus Stephylococcu	Cornmeal, stewed corn Salad, meat	92	0	Home Company Dining-Room	EF EF
1	Not reported	Not reported	Rice, dry beans	8	0	Police Headquarters	EF
1	Chemical	Chlorine	Water	90	0	School Dining-Room	С

AGE:

A: < 1 year of age
B:1 to 4 years of age
C:5 to 14 years of age
D:15 to 44 years of age
E:45 to 64 years of age
F:>65 years of age

TABLE N°2

EL SALVADOR. REPORTED OUTBREAKS OF FOOD BORNE DISEASE (FBD) THIRD QUARTER, 1994.

				Nº SUBJ	ECTS	TYPE OF	
N° OUTBREAKS / DISEASE		ETIOLOGY	FOOD	SICK	SICK DEAD		AGE
1	Amoebiasis	NR'	NR	6414	0	NR	ABCDEF
1	Hepatitis	Hepatitis A	NR	353	0	NR	ABCDEF
1	Gastroenterit is	E.Coli S. Aureus	Cream cheese	25	0	Street Vendor s	BCDE
1	Typhoid fever	S.Typhi	NR	156	0	Street Vendor s	BCDEF
1	Cholera	V.cholerae 01-Ogewa	NR	541	2	Street Vendor s	ABCDEF

* NR: Not Reported

AGE:

A:< 1 year of age
B:1 to 4 years of age
C:5 to 14 years of age
D:15 to 44 years of age
E:45 to 64 years of age
F:>65 years of age

TABLE Nº 3

MEXICO. REPORTED OUTBREAKS OF FOOD BORNE DISEASE (FBD) FIRST, SECOND AND THIRD QUARTER, 1994.

N° OUTBREAKS / DISEASE				N° SUBJ	ECTS	TYPE OF	AGE
		ETIOLOGY	FOOD	SICK	DEAD	OUTLET	AGE
5	Chemical Poisoning	Insecticide Hydrocarbon NR' Arsenic	Watermelon Water Wild mushrooms Omelettes and Dry beans	18 37 14	0 0 3	Bakery School Home Home	C CD CDEF ABC
2	Shigellosis	Shigella sp.	Shellfish Water	200 5	0	Tourist boat NR	NR A
1	Food Poisoning	Vibrio cholerae Staphylococcus Salmonella sp.	Miscellaneous	68	0	Hame	E
3	Salmonellosis	Salmonella sp. (Groups B,C,E)	Meat Cream	597	1	Street Instit. Dining room	CDE
3	Brucellosis	Brucella sp. (Possibly melitensis)	Cheese and milk	69	0	Home Store	BCDEF
3	Hepatitis	Hepatitis A virus	Water	23	1	Home Day care center	вс
3	Gastroenteriti s	E.coli	Miscellaneous Cheese	83	0	Industri al plant Store	CDEF
7	Gastroenteriti s	NR	Water Miscellaneous	2734	5	NR	BCDE
1	Food Poisoning	Staphylococcus E.coli	Cream cheese	29	0	NR	F
23	Food Poisoning	NR	Miscellaneous	1445	0	Hospital School Home Factory	BCDEF

* NR: Not Reported

AGE:

A: < 1 year of age D:15 to 44 years of age B:1 to 4 years of age E:45 to 64 years of age C:5 to 14 years of age F:>65 years of age

TABLE Nº 4

URUGUAY. REPORTED OUTBREAKS OF FOOD BORNE DISEASE (FBD). 1994.

N° OUTBREAKS / DISEASE				Nº SUB	JECTS	TYPE OF	
		ETIOLOGY FOOD		sick	DEAD	OUTLET	AGE
5	Hepatitis	Hepatitis A Virus	NR"	329	0	Home	C
4	Acute Gastroenteritis	E.coli Cf.perfringens St.aureus NR	Russian Salad Zucchini Home made cheese Pastries	9 14 12 3	0 0 0	Home Home Home Home	CD DEF BCDE BC

* NR: Not Reported

AGE:

A: < 1 year of age B:1 to 4 years of age C:5 to 14 years of age D:15 to 44 years of age E:45 to 64 years of age F:>65 years of age

TABLE Nº 5

VENEZUELA. REPORTED OUTBREAKS OF FOOD BORNE DISEASE (FBD) THIRD QUARTER, 1994.

Nº OUTBREAKS / DISEASE				Nº SUBJ	IECTS	TYPE OF	
		ETIOLOGY	FOOD	SICK DEAD		OUTLET	AGE
2	Gastroenteritis	S.aureus	Cream cheese	17	0	Home	NR'
1	Gastroenteritis	NR	Salad dressing	8	0	Club Dining room	NR

* NR: Not Reported

TABLE Nº 6.

OUTBREAKS OF FBD REPORTED BY THE COUNTRIES DURING 1994.

	OUTBREAKS						
COUNTRY	NUMBER	SICK	DEAD				
COLOMBIA	9	406	0				
COSTA RICA	21	70	0				
EL SALVADOR	5	7,489	2				
GUATEMALA	1	146	0				
MEXICO	51	5,326	14				
URUGUAY	9	367	0				
VENEZUELA	3	25	0				
TOTAL	99	13,865	16				

Note: Some of the countries have reported the following individual cases in addition to the outbreaks:

Costa Rica: 141
Guatemala: 3
Mexico: 8
Uruguay: 4
Venezuela: 2

TABLE Nº 7

FREQUENCY OF OUTBREAKS PER DISEASE AND RELATED FOODS: COLOMBIA, COSTA RICA, EL SALVADOR, GUATEMALA, MEXICO, URUGUAY AND VENEZUELA. SIRVE-ETA, 1994.

DISEASE		Nº SUE	SUECTS	FOODS	
OR ETIOLOGY	N° OF OUTBREAKS	SICK	DEAD		
Food Poisoning	47	1,737	0	Miscellaneous	
Hepatitis A	9	705	1	Most cases NR*. Water(1)	
Gastroenteritis	9	2,745	5	Cheese, water, Pastries	
Salmonellosis	9	965	1	Meat, water, pastries	
Brucellosis	3	69	0	Cheese, milk	
Shigellosis	2	205	2	NR	
Staphylococcus Aureus	6	175	0	Russian salad	
E.Coli	4	92	0	Cheese, Russian salad	
Toxins	2	14	3	Wild mushrooms	
Cl.Perfringens	1	14	0	Meat	
B.Cereus	1	3	0	Cornmeal	
Amoebiasis	1	6,414	0	NR	
Chlorine	1	90	0	Water	
Insecticide	1	18	0	Watermelon	
Arsenic	1	4	2	Omelettes, Dry beans	
Hydrocarbons	1	37	0	Water	
Cholera	1	541	2	NR	

^{*} NR: Not Reported

LIST OF FOCAL POINTS SIRVE-ETA

1.- ARGENTINA

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Unidad Compiladora hasta que Autoridades Nacionales tomen decisión.

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Ministerio de Salud

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16.- VENEZUELA

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SISTEMA DE INFORMACION REGIONAL DE ENFERMEDADES TRANSMITIDAS POR LOS ALIMENTOS INFORMACION TRIMESTRAL SOBRE CASOS/BROTES DE ETA

1. PAIS:

3.TRIMESTRE:

2. FECHA:

AD	MUE					
11 CANTIDAD	ENF.				_	
10 EDAD						
9 TIPO DE	LOCAL					
8 ALIMENTO						
7 ENFERMEDAD/ AGENTE	ETIOLOGICO		The second secon			
6 CIUDAD						
5 FECHA						
4 NUMERO DE ORDEN	BROTE(B)/ CASO(C)					

INSTRUCTIONS FOR COMPLETING THE FORM FOR THE PROVISION OF QUARTERLY INFORMATION REGARDING CASES/OUTBREAKS OF FOOD BORNE DISEASE

PURPOSE:

To collect regional information regarding the number of cases and outbreaks of Food Borne Disease (FBD) in order to provide the countries with information by means of a special report.

To provide information concerning the food involved and the age of the subjects affected as well as data regarding the diseases.

IMPLEMENTATION:

SECTOR IN CHARGE: the staff working at the Unit/Agency appointed by each country.

OBJECTIVE: to submit a duly completed copy of the form to the PAHO Office in each country, which will in turn forward the form to INPPAZ.

FREQUENCY: this form must be used to gather centralized quarterly information of the cases or outbreaks of Food Borne Disease reported by the health system.

COMPLETION OF THE FORM:

- 1. Country: self explanatory.
- Date of the report: fill in the date on which the report is issued.
- 3. Quarter: indicate in arabic numbers the quarter to which the information corresponds.
- 4. Numbers: assign a correlative number to identify the cases and the outbreaks. The correlation of the numbers shall be maintained on a yearly basis. The number will be followed by a letter, in brackets, to indicate whether it refers to a case (C) or an outbreak (O).
- 5. Date: indicate the date on which the subject became ill or the outbreak occurred.
- 6. City: include the city where the case or outbreak occurred.
- 7. Disease/etiology: report the disease diagnosed in each case or outbreak, indicating whether it was confirmed through laboratory testing (L) or clinical evidence (C). For example: hepatitis A (L) if it was confirmed through laboratory testing; typhoid fever diagnosed without laboratory confirmation will be recorded as follows: Typhoid fever (C). When dealing with isolated cases and whenever the classification of the etiology is available, it should be reported as follows: salmonellosis (L) S. enteritidis.

- 8. Food involved: the food suspected by anamnesis or the food confirmed by a diagnosis based on laboratory testing. If the food was confirmed by laboratory analysis, record the food, followed by an (L); use an (S) if the food is the suspected cause. Hence: water (L) or milk (S).
- 9. Type of outlet: indicate the type of outlet where the incriminated food was sold or eaten. For example: school dining room, old people's home, street vendor, etc.
- 10. Age: For cases, record the years of age of the patient. When the subjects are under one year old, indicate the age in months followed by a small "m". For example: 11m.

For outbreaks, record the age of the most frequent categories, according to the following classification:

- A) subjects less than 1 year old.
- B) 1 to 5 years of age
- C) 6 to 12 years of age
- D) 13 to 20 years of age
- E) 21 to 60 years of age
- F) subjects older than 60
- 11. Record the number of subjects affected and the number of cases of death in the corresponding columns.